Breastfeeding and Fertility Control

Breastfeeding and fertility control are important health issues for international agencies, national governments, and women in their reproductive years, as well as their children and families. Breastfeeding is important not only because of its role in infant nutrition, but also because of its influence on fertility. The duration of postpartum amenorrhea and infertility are determined principally by breastfeeding.[1] Unfortunately, the duration of this effect cannot be predicted easily. For this reason, the contribution made by Cole and her colleagues in this issue of the *Journal* is an important one.[1]

The interval between births has three phases: postpartum amenorrhea, menstruating interval, and subsequent pregnancy. Ideally, a contraceptive agent should be safe and effective, and should not interfere with normal female physiology, which is essential to child rearing or any other aspect of a woman's life except that of conception in each of these three phases. Cole, *et al,* help address this problem in two ways. First they cite studies showing that intrauterine contraceptive devices (IUDs) have little effect on lactation or infant growth. Second, they analyze data sent by investigators from 35 countries to the International Fertility Research Program (IFRP), which show that breastfeeding is not associated with increased IUD expulsion rates or other events involving continued IUD use. This is an important finding because suckling is associated with the release of a posterior pituitary hormone that not only enhances the expulsion of breast milk but also, by stimulating uterine contractions, might increase the likelihood of expulsion of an IUD. This report confirms an earlier study which they cite, and it is consistent with clinical observations.

Why should fertility control after childbirth be such a problem? First, even though breastfeeding increases the duration of postpartum amenorrhea about 0.4 months/month of breastfeeding[2] the duration of anovulation following childbirth remains unpredictable. Second, oral contraceptives that contain estrogen inhibit lactation.[3] Third, other methods of contraception that do not inhibit lactation have relatively low acceptability (e.g., IUDs), are less effective (e.g., diaphragm and condom), or are not presently approved as contraceptives in some parts of the world (e.g., injectable agents, such as depot medroxyprogesterone acetate).

Using abortion in early pregnancy to replace contraception is another possibility. This would however be unacceptable to some women. Furthermore, it would create a paradoxical situation in which women would increase their likelihood of unplanned pregnancy because of an increased number of woman-months at risk of unplanned pregnancy. Not only is post-abortion amenorrhea of shorter duration than postpartum amenorrhea, but the $\leq$13 weeks of a voluntarily terminated first trimester pregnancy would replace the 40 weeks of a term pregnancy, leaving $\geq$27 weeks of added exposure to an unintended conception.[4].

The combination of the effects of breastfeeding and the safety of contraceptives raises problems, especially for third world countries. If oral contraception did not inhibit lactation and were not related to thromboembolic disorders, this method would be popular, safe, and effective. IUDs do not inhibit lactation and are effective for postpartum women regardless of whether or not they choose to breastfeed, as Cole and her coworkers have shown. Safety however, is, a difficult issue to with which to deal. In the United States, IUDs are associated with a low risk of death, but their use is associated with the higher rate of hospitalization than are oral contraceptives.[5] Moreover, IUDs are associated with pelvic inflammatory disease.[6] In developing countries, where breastfeeding is more prevalent and health services are more difficult to obtain than in the United States, the risk of pelvic infection would probably remain unchanged. The risk of mortality, however, would surely increase. The injectable agent most widely used is also effective and does not inhibit lactation, but its safety remains an unsettled issue in the United States. Controversy about this agent is likely to persist as long as scientists continue to report conflicting evidence concerning malignant tumors in animals and humans.

Breastfeeding is generally accepted as being beneficial for infant growth and development even in countries where sophisticated formulas are readily available. I confess to sharing this belief. National and regional surveys indicate that this point of view is widely held among the better educated women in this country regardless of their ethnic affiliation.[7,8] A recent report on breastfeeding patterns in nine countries was, however, unable to show differences in the growth of breastfed and non-breastfed babies.[9]

What might be done to resolve these problems? First, the relationship between breastfeeding and infant health needs to be addressed in a thoughtful, objective, and scientific manner. Both the cultural and commercial practices that can lead to improved nutrition for children need to be clearly identified and promoted nationally and internationally.

Second, the distribution and promotion of contraceptives that do not inhibit lactation would permit women and their infants to receive the benefits of breastfeeding. The data reviewed by Cole, *et al,* suggest that the IUD might be such a device. Women who use IUDs or other traditional contraceptives while lactating, however, would need to accept risking higher rates of pelvic infection, and/or unplanned pregnancies, and to consider the means most acceptable to them for managing unplanned pregnancies. Ideally, they would need to have ready access to medical care.

Finally, rigorous and detailed studies of contraceptive safety are needed for parts of the world other than the United States, the United Kingdom, and portions of Europe. Because contraceptive safety and effectiveness can be influenced by factors other than the agents themselves, the safety and the effectiveness of modern and traditional means of fertility control must be investigated further. A renewed effort to develop not only new fertility control agents but to fully assess their safety is needed.

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Influenza Vaccine: Delivering the Goods

This issue of the *Journal* contains an interesting and provocative article for practitioners of preventive medicine—Fedson and Kessler's description of a hospital-based influenza immunization program.[1] Official recommendations of the Immunization Practices Advisory Committee (ACIP) of the Centers for Disease Control have been consistent over the years in urging annual vaccination of persons at high risk for morbidity and mortality from influenza. This high-risk group has been defined broadly to include all of the elderly and persons of all ages with a variety of chronic diseases, especially cardiopulmonary diseases. Although millions of doses of influenza vaccine are made and sold each year, only about 20 per cent of the more than 40 million people in the United States who could be considered at high risk actually receive the vaccine.[2,3] The official policy has not been successful and it appears reasonable to speculate on whether more effective policies can be developed.

Under the assumption that attention should be devoted to persons at high risk for complications of influenza, it is surprising that there has been so little work on defining categories of risk within the broadly defined high-risk group. For example, although conditions such as chronic obstructive lung disease have a relationship to the risk of dying from influenza, the risk is not likely to be distributed evenly among all persons so diagnosed. Investigations might show that the risk is inversely related to baseline pulmonary function or directly related to the prior frequency of acute exacerbations of respiratory distress. If some persons with chronic obstructive lung disease were found to be at much higher risk than others, could special immunization efforts be targeted to those at very high risk? Do we know enough about persons over age 65 who are free of chronic disease to target subgroups of this large segment of the high-risk population?

In Fedson and Kessler's study, 34 of 39 (89 per cent) patients hospitalized with laboratory confirmed influenza during an influenza A epidemic in 1977–78 were in the broadly defined high-risk group. More importantly, a sizable percentage of these patients had had recent medical care either in the hospital or in its ambulatory clinics. Yet, not one of these patients under active treatment (either in the hospital or on an ambulatory basis) had received influenza vaccine that fall! Fedson and Kessler's approach to control of influenza is based on defining a particularly high-risk group consisting of persons with chronic conditions who have recently been hospitalized or who are making frequent ambulatory visits and then focusing immunization efforts on this group.

That brings us to the problem of immunizing whatever group is targeted for immunization efforts. Relatively little work has been done to elucidate how much of our failure to immunize might be due to a failure of our medical care system to offer the vaccine and how much is due to active refusal by the population. In Fedson and Kessler's article, the percentage of patients offered vaccine by nurses on three general medicine inpatient units ranged from a high 72 per cent down to 13 per cent; and only 50 per cent of those offered vaccine accepted it. In the ambulatory setting, 74 per cent were offered vaccine by unit secretaries, and vaccine acceptance was less than 40 per cent. Thus, it appears we need both more effective ways of offering vaccine to targeted groups and more effective ways of gaining its acceptance.

In hospital and ambulatory settings, clinicians are used to ordering tests, procedures, and medications. Most clinicians would probably be upset if patients accepted their recommendations only 60 per cent of the time. What distinguishes influenza immunization in the minds of clinicians and in the minds of patients? Answers might be that influenza vaccine is not effective or that it is very toxic, but such answers betray ignorance. Many studies have shown the vaccine to be both effective and safe. Possibly the risks of influenza seem remote to the patient and the clinician. If so, then Fedson and Kessler's article demonstrates that the risks are not so remote for certain people. Do clinicians and patients routinely distinguish preventive from therapeutic measures in some way? Hardly a clear distinction, since some preventive measures are ordered routinely by clinicians, e.g., elastic stockings. In short, I do not have a satisfactory answer to the question. Perhaps if recommendations for control of influenza were more focused, the vaccine would simply be ordered by clinicians after explanation to and consent of patients, much as we order iron for patients who have sustained blood loss so that a small percentage will avoid developing symptomatic anemia.